nepros CONCEPT BOOK



BRAND STORY

NEW PROFESSIONAL SATISFACTION

NEPros

To develop the best tools in the world, KTC created nepros, born by reviewing all materials, design, and production facilities.

Beginning in 1990, KTC set out to offer automotive maintenance professionals the best tools in the world. During the next five years KTC created nepros line with new original material/ new production method, overcoming normal tool standard.

KTC's aim in developing these tools was very simple: To create ideal tools by thorough examining all other top-quality tools from the world as well as interviewing of 300 professional mechanics. The nepros are ideal tools which are superior than other top-quality products.

The nepros is named after "NEw PROfessional Satisfaction." Satisfies mechanics' demands for thinner/longer tools usable in complicated/narrow spaces.

Not only shiny beauty but also handiness grasps the heart of all mechanics.

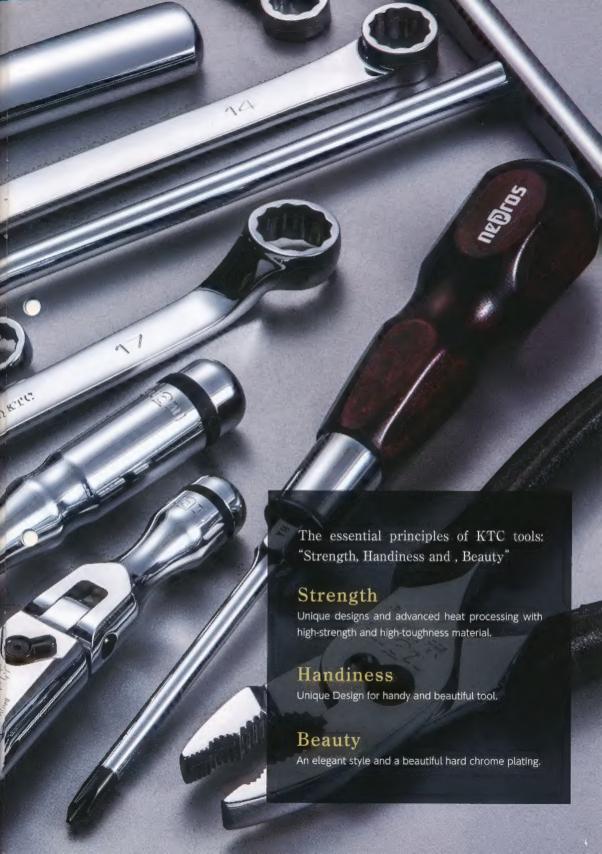
The nepros continues to develop in order to satisfy professional mechanics all over the world.

Warranty

Only if the nepros is not functional due to production/material problem, we will replace/repair the product. This warranty does not cover abnormal use by customers, abrasion case, consumable products such as screwdriver and so forth.







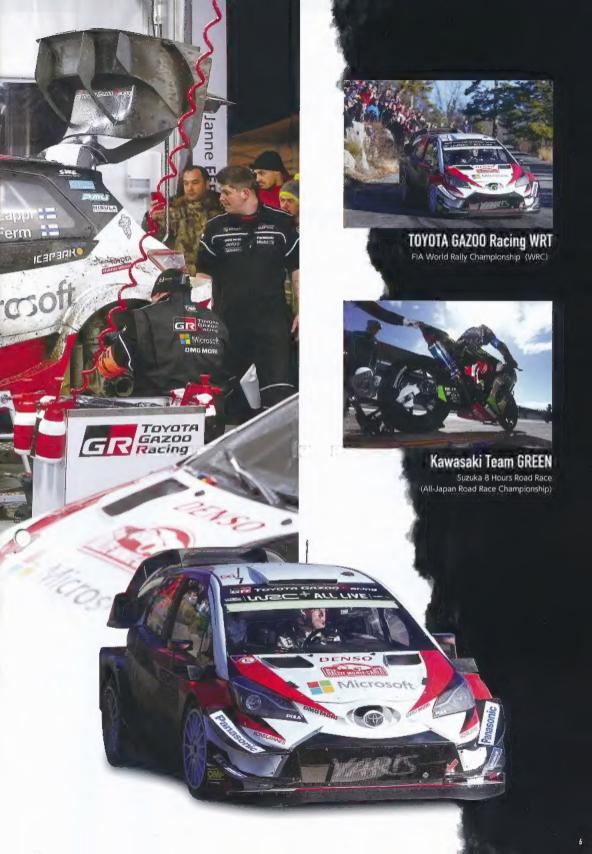




KTC's passion "Fight together aiming for the top in an extreme environment".

KTC supports in a variety of motor sports such as TOYOTA GAZOO Racing WRT in the FIA World Rally Championship (WRC), Kawasaki Team GREEN in the Suzuka 8 Hours Road Race (All-Japan Road Race Championship).

KTC nepros are admired with professional mechanics who fight in extreme races.



The "nepros" Analysis

The nepros is ultimate tool to stimulate the sensibility of professional mechanics.

This section explains nepros function in detail.

RATCHET HANDLE



Excellent handy style

Gear that even takes into account the sound during use

Spin the nepros gear and you will hear a clicking sound. This beautiful sound is composed by a precision mechanism with a feed angle of 4°, a 7-step claw, and a 90-booth gear. The nepros has created an innovative structure for the drive mechanism, increasing the number of gear teeth leads to a strength decrease. The KTC solution is to achieved an equivalent level of strength by increasing the number claws which catch on gears to 7 and theireby distributing the force. Furthermore, designing the claw and changer as separate parts makes it possible to perform detailed adjustment for each spring. This achieves the gears fine engagement with claws, light spinning torque, and smooth movement.





Reliable switch lever

The swing of the switch lever is big to ensure reliable operation.



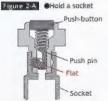


Figure 2-B Descript a socket

PUSH

Union Mechanism

Thanks to the Union system, the ball is heid by a surface that is not tapered but flat. Therefore, even if the user attempts to remove the socket without the push button, the ball is not pushed in and the socket cannot be removed (Figure 2-A). By pushing the button, the push pin lowers and the ball drops down by one stage, and the socket can be easily removed (Figure 2-B). This structure prevents the socket from being removed from the ratchet handle. It prevents the socket from being removed from the ratchet handle, it prevents the socket from falling when working in high places, etc.





Push button preventing operational mistakes

Reducing projection of the release button for the Union Mechanism will prevent useless release. A large button is used for easy pushing.

Compact head

The compact head shape increases operational efficiency.

KTC BR3E nepros NBR390





Replaceable gear and claw







Balanced/Elegant Grip

To answer the poor weight balance problem, KTC's solution was the unprecedented idea of using a hollow structure for the grip. The grip seems to form by integrated molding; but KTC's unique processing technology made a hotiow interior. The result is an outstanding balance between ratchet thick grip and ratchet head.



Special structure

The nepros has the grip center offset very close to the head. The nepros ratchet handle has the grip center offset towards the Insertion point with the head. The force exerted on the grip closer to the socket transmits to the socket.





The required range for the 90-tooth gear nepros is about 12 mm. The 90-tooth gear contributes work efficiency, Working in an environment which has space for the grip and to only move by 50 mm is possible. Since nepros only requires 12 mm per 1 notch, it is possible to turn by 4 notches, or 76°,









KTC BRSE



nepros NBR390

about12mm

PATCHET HANGLE LINEUP

Major lineup





NBR390H STUBBY RATCHET HANDLE

The nepros compact ratchet handle fits in the pairs of your hand. This highly-convenient toblican be used in various combinations with inserting angles.



Short Flex,

SOCKET



Small, thin, and compact form

socket

Compact design

The compact tool has a shorter height and smaller external diameter made possible by an ideal design, tough materials, advanced processing technology, and optimal heat processing.



Hard chrome plating for anti-weer, anti-corrosion, and anti-peeling.

Rubber ring preventing slippage The rubber ring greatly improves workability during hand-cranking

Clear engraving

The beautifully-refined engravings are easy to see and increase the efficiency of work.

Unique design for fitting with other drive tools

Uses a larger ball in drive tools. Optimized socket balt groove prevents backtash and achieves superior fitting.

N-PowerFit shape

N-PowerFit shape distributes stress through a gentle arc in the bore by enlarging the contact surface ideal contact prevents damage to bolts and nuts and increases the strength of the socket. This shape contributes to compact size of the socket top.





Original dimensional standard

KTC's original dimensional standard reduces the fit gap with boits and nuts to the absolute minimum, creating a superior fit leeling.







UNIVERSAL JOINT



Smooth power transfer and superior operability

Extra smoothness:Grand Cross mechanism

Universal joint has two rotating axes which are out of alignment in a vertical direction. Consequently, movement becomes littery as the angle becomes greater. The nepros solution: comfortable work does not bend past an angle where it is possible to rotate and transmit torque, unlike usual versions,

Rotating axes are out of alignment in a vertical direction

General Universal John



Compact body

Strength was increased by shifting the drive angle by 45° together with achieving a thinner body.





Smooth access with firm holding

The nepros universal joint with spring force provides smooth access to bolts. Universal joint with socket will shake if holding force is not sufficient, and accessing bolt gets difficult.



The nepros universal joint NBJ3 does not shake and provides firm hold even with a 24 mm socket N83-24 (weight 90 g)



EXTENSION BAR

Elegant form for superior torque transfer

Elegant form was created by stress analysis. This form prevents twisting stress from being focusing on one particular point, This achieves excellent torque transfer and smooth feeling during use.

Inserting angle uses N-PowerFIt shape which transfers force at the surface

Product strength was Improved by N-PowerFit for the Insertion angle, N-PowerFit distributes stress by expanding the contact surface,



Ball and shape to prevent backlash

A larger ball is used to improve fit with the socket. installing a collar on the fitting area decreases backlash.



Straight hold mechanism's other use

E WAR

The mentos wobble extension bar has a flexible joint area and can be used as a swing head extension bar, Using the stialght hold mechanism makes if possible to hold the sacket straight by inserting the sacket more deeply.



Flexible state



Straight hold

QUICK SPINNER



Perfect grip design for rapid turning



Rubber ring for increased

Together with rapid rotation and resistance to slippage, the rubber ring significantly increases workability at the time of nullout

Jses N-PowerFit shape

No rattling

With a larger ball and unique settings for the ball groove, the spinner enables stable work without any shaking during

Compact design

Thickness is reduced to ealize a gizet topquire.

Fast and comfortable

The nepros ratchet handles' excellent external diameter allows rapid rotation by grabbing & rotating with fingertips, insertion angles 1/4'sq. (Normal type): 3/8'sq. (Normal/Compact), 1/2'sq. (Normal)



RATCHET HANDLE ERGE



Ciear engraving

T-shape

e ounition easy

Size is displayed in targe engraving on

the handle top and in the socket hole. The Handle/Body press-II portion is processed into a hexagonal shape for

Tishape wrenches/a square shape ioi

This

handles.

napros QUICK SPINNER NRE38 RACHET HANDLE NBR390





T-SHAPED WRENCH

Ultimate T-shaped handle for outstanding balance and operability

Rubber rings for increased grip strength -

increasing grip scrength by proventing slippage during work the subbet ing, at action to each end of the handle serve as contact surfaces for protection when the handle is placed on

Precise and accurate press-fit processing

The joint between the handle and shall uses accurate press-fit processing. Precise processing technology is required in order to open a hole in the center of the handle and press-ilt the shaft. This process produces the handle and shall at a 90° angle and makes rotation extremely smooth. Unlike welding, no protuberances are formed on the joint area.



KTC T-SHAPED WRENCH TH-8



REGIOS TISMAPED WRENCH

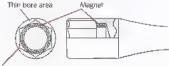


Unique form for fast-rotation performance

Handle top & bottom are shaved down into equaweight. During rapid rotation, this design creates inertia which produces smooth rotation. Moreover the handle length is different for each size Tools with ultimate length for rapid rotation exer required torque on bolls and nuts of all sizes

Thin design and magnets for tiny space

The bore uses N-Power Filt shape for distributing stress. Minimizing the gap between the handle and botts/nuts with a thin design improves workability. A magnet creates holding bolts, nuts and access to recessed spaces.



Form to improve workability and operability

COMBINATION WRENCH





Compact head

This new speal shaped head was hore from scless a fatysis Shaving away extra thickness write haintaining thickness h areas exposed to cress allowed us to achieve an even stimmer tip shape.

15° rise angle with compact box end area for both sides

The lise at ignerion, he dualiend side has a 15% angle full control use the siep between the handle and our makes it possible to use authoritie from and bank sides. The compact externor diameter is among the smalles in the world and is idea; for work in ign

N-Power Fit protection for boils/nuts and bore with minimized taper.

eat the N-Power Filt shape, which in leases, le contact autilices with bolts. and ats, as well as a bore section with minimized ager Gripping from the opinion in the boltz nut prevents sliding

Various sizes

hree lengths, short, standard, long Possit it seject the best length to use IOL YOU'S WUIK ORVINGAMENT



Clear engravings

Large and easy-to-see engravings are used on the front and back. Visiting as well as workability are improved

ADJUSTABLE WRENCH



Side surface shape is ideal for hands The side of the harose's wide and easy is grip. The shape prevents hand pair





Well-balanced & Handy Grip

The grip features an elliptical shape Grip gets thicker in order to improve the weight balance

WOODEN GRIP SCREWDRIVER





Beautiful elegant grip for force control

The grip is elegan, for a beautify, and original form. High-quality maple wick its ised in the grip. The hexagonal shape is easy to grip with the wathin if he wonder material Finheimore in Lenter part has a depression which hakes alleaster to push and arm

Different color of cross (plus) and flat (minus)

Cross (plus) has a red (cherry red) finish while (lat Iminus) has a green (forest green), tensh.

1

KTC original steel

Considering cross (plus) and flat unities) driver KFC uses ix gine, steel of chromium variation of different hardness.

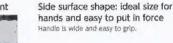
BOX END WRENCHES



Basic functions and variations for reliable use

Bore area/N-Power Fit shape prevent damage to bolts/nuts

The N-Power Fit shape increases the contact surface with bolts and nuts. The hore area minimizes taper to ensure contact of the bolt bottom with the nut head.



Asymmetrical design: Expanding the range of use

The nepros half-moon weenches have a unique asymmetrical design with different radius from lett/right sides. The different radius enlarges the range of use and provides support for a variety of situations. Combination with a same-sized S-shape box end wrench with a different radius satisfies various









Improving workability: Adding an angle to box end wrench

KTC added a 15° angle to the bore of the straight standard hexagonal box end wrench and a 7°30' angle to the straight standard box end wrench. Using both the front and back of the tools enables work in a range of 30° for the hexagonal type and 15° for the dodecagon type. *The dodecagon type fixed at an angle of 7°30' is only available for the straight standard box end wrench





A FLAT TYPE STANDARD HEX BOX END WRENCH

A FLAT TYPE STANDARD BOX END WRENCH



Thickness controlled according to direction of work

A thin design is used for the straight type, which is often used to access in vertical directions. On the other hand, a smaller external diameter is used for the normal box end wrench, which is often used to access in a horizontal direction. This realizes excellent design for the work situation.



A FLAT TYPE SHORT BOX WRENCH



△ 45'×6'SHORT OFFSET VYRENCH

Clear engravings Clear engravings are used on

the front and back. Visibility is enhanced and workability is Improved.



A FLAT TYPE STANDARD BOX END WRENCH FLAT TYPE STANDARD HEX BOX END WRENCH



▲ 15"OFFSET YVRENCH

Length and protruding bore area for excellent workability

This wrench is 1.5 times longer than standard wrenches and has a bore area which protrudes largely to one side. This ensures secure fit with offset bolts, thus increasing the range of work.



Rise angles of 45° and 6°

Rise angles of 45° and 6° are used to bring the center of the bolt closer to an imaginary line extending straight from the handle. This design reduces stripping and transfers largue directly.

Ultimate torque transfer and workability

Tarque transference is further improved by special design with the center of the bolt closer to an imaginary line extending straight from the handle. The protruding shape on one side enables usage even when there is spot facing around the bolt or nut. The rise angle is designed to start straight and then reach 15° ideal for tlny spaces.

